

## 6202.0 - Labour Force, Australia, Nov 2003

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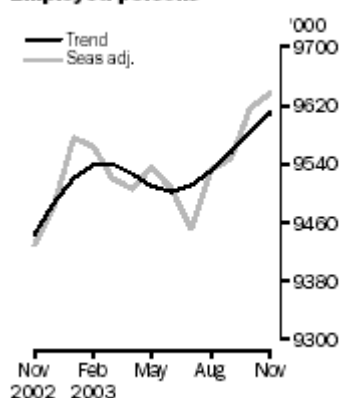
## Summary

### Main Features

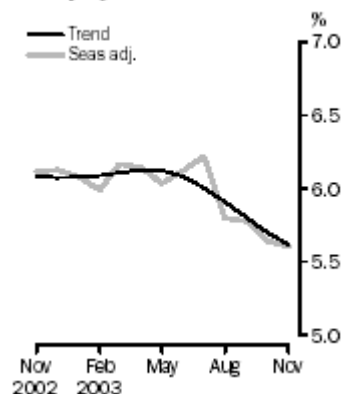
#### KEY FIGURES

	Oct 2003	Nov 2003	Oct03 to Nov03	Nov02 to Nov03
<b>Trend</b>				
Employed persons ('000)	9 584.9	9 610.5	25.6	1.8%
Unemployed persons ('000)	579.7	572.4	-7.3	-6.5%
Unemployment rate (%)	5.7	5.6	-0.1pts	-0.5pts
Participation rate (%)	63.6	63.6	0.0pts	-0.3pts
<b>Seasonally Adjusted</b>				
Employed persons ('000)	9 616.8	9 637.5	20.7	2.2%
Unemployed persons ('000)	575.1	572.2	-2.9	-6.8%
Unemployment rate (%)	5.6	5.6	0.0pts	-0.5pts
Participation rate (%)	63.8	63.7	0.0pts	-0.1pts

**Employed persons**



**Unemployment rate**



#### KEY POINTS

##### TREND ESTIMATES (MONTHLY CHANGE)

- EMPLOYMENT increased to 9,610,500.
- UNEMPLOYMENT decreased to 572,400.

- UNEMPLOYMENT RATE decreased to 5.6%.
- PARTICIPATION RATE remained at 63.6%.

## SEASONALLY ADJUSTED ESTIMATES (MONTHLY CHANGE)

- EMPLOYMENT increased by 20,700 to 9,637,500. Full-time employment increased by 27,900 to 6,912,600 and part-time employment decreased by 7,200 to 2,724,900.
- UNEMPLOYMENT decreased by 2,900 to 572,200. The number of persons looking for full-time work decreased by 11,800 to 418,600 and the number of persons looking for part-time work increased by 8,900 to 153,600.
- UNEMPLOYMENT RATE remained at 5.6%. The male unemployment rate decreased by 0.4 percentage points to 5.2% and the female rate increased by 0.4 percentage points to 6.1%.
- PARTICIPATION RATE decreased marginally to 63.7%.

## NOTES

### CHANGES THIS MONTH

This publication and associated electronic products have been redesigned to improve the presentation of data for persons aged 15–19 years, to give greater focus to trend data, and to provide longer time series. Details of these changes are available in **Information Paper: Changes to Labour Force Survey Products** (cat. no. 6297.0) which was released on 23 October 2003. This information paper is available free from this web site (Themes - People, Labour).

### CAI IMPLEMENTATION

The ABS has begun the progressive implementation of computer assisted interviewing (CAI) into the Labour Force Survey (LFS). Under CAI, interviewers record responses directly onto an electronic questionnaire in a laptop computer.

In both the October and November surveys, the CAI method was used on a random 10% sub-sample of survey interviews. The remaining 90% of interviews were conducted using the traditional 'pen and paper' method.

The change to the interviewing method is not expected to affect the published estimates in any meaningful way. Nonetheless, the ABS is monitoring the situation carefully and has conducted a range of analyses on both October and November data. These analyses have confirmed that any effect that the change in interview method in the 10% CAI sub-sample may have had on survey responses has not materially affected the aggregate estimates for either month.

The proportion of LFS interviews conducted using CAI will remain at 10% for the December and January surveys. Subject to further analysis continuing to confirm that the change in method is not having a significant impact on survey estimates, the use of CAI will increase to 40% of interviews in February 2004, then to 70% in April 2004, and finally to 100% in May 2004.

Users will continue to be informed of the progress of CAI implementation, including the results of further analyses, through updates in this publication.

## **INQUIRIES**

For further information about these and related statistics, contact the National Information and Referral Service on 1300 135 070 or Craig Blair on (02) 6252 6525.

## **FORTHCOMING CHANGES**

The ABS will be introducing a number of changes to labour force statistics over the next few months.

The first of these changes, to be introduced with the release of December 2003 LFS data, relates to the seasonal adjustment process used to produce LFS estimates. The second group of changes involves revisions to detailed original data at the unit record level which will flow through to published aggregated data. These changes will be introduced with the release of February 2004 LFS data.

The changes which will impact upon this publication and associated electronic products are detailed below. Further information on all the changes will be available in **Information Paper: Forthcoming Changes to Labour Force Statistics** (cat. no. 6292.0) to be released on 16 December 2003. This information paper will be available free from this web site (Themes - People, Labour).

## **SEASONAL ADJUSTMENT PROCESSES**

From the December 2003 issue of this publication, the ABS will use concurrent seasonal adjustment in the LFS, replacing the forward factor adjustment process currently used to produce seasonally adjusted estimates. Concurrent seasonal adjustment uses original data up to and including the current month to produce seasonally adjusted and trend series, while the forward factor adjustment method only revises seasonal factors annually.

By increasing the frequency of seasonal reanalysis from annually to monthly, concurrent seasonal adjustment produces initial seasonally adjusted estimates that are usually closer on average to their final values, as any change in seasonality is picked up sooner. While revisions under the concurrent seasonal adjustment method are more frequent (monthly), the degree of revision is generally less than with the forward factor method of adjustment (where revisions are made annually).

Analysis has also shown that the proximity of LFS interviewing to holidays can have an effect on both people's availability for the survey and on their labour market involvement. A specific adjustment for this effect in respect of the January interview start date and the timing of Easter will be introduced to coincide with the introduction of concurrent seasonal adjustment.

## **REVISION OF POPULATION BENCHMARKS**

LFS estimates of persons employed, unemployed and not in the labour force are calculated in such a way as to add up to independent estimates of the civilian population aged 15 and over (population benchmarks). These population benchmarks are revised every five years following the Census of Population and Housing. From February 2004, LFS estimates will be compiled using revised population benchmarks based on results from the 2001 Census.

LFS estimates for the period January 1999 to January 2004 will also be revised based on the updated population benchmarks. The revised estimates will be available with the release of the February 2004 issue of this publication on 11 March 2004.

The population benchmarks currently used by the LFS are classified by state/territory of usual residence, capital city/rest of state, age and sex. In addition to these population benchmarks, from February 2004 the LFS will use population benchmarks for labour force region by sex. There are currently 68 labour force regions across Australia. The introduction of regional benchmarks will improve the quality of estimates for labour force regions without compromising the quality of estimates at national, state and territory levels.

LFS estimates for labour force regions (available each month in electronic products) will be revised back to January 1999.

## DEFINITIONAL CHANGE

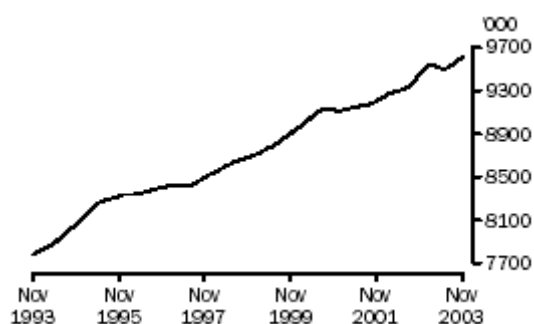
In February 2004, the ABS will introduce a minor change to the definition of unemployed persons. The change relates to a small group of persons ('future starters') who had not actively looked for work because they were waiting to start a new job within four weeks from the end of the survey reference week, and would have started in the reference week if the job had been available then. These persons are currently classified as not in the labour force. From February 2004 they will be classified as unemployed, in line with International Labour Organisation guidelines.

Data to support this change has been available since the new LFS questionnaire was introduced in April 2001. However, the ABS announced then that, due to concerns that such a change could result in a break in some core labour force series, implementation of the change would be deferred until February 2004 (see Information Paper: Implementing the Redesigned Labour Force Survey Questionnaire (cat. no. 6295.0) which was released on 3 May 2001). This timing coincides with the five-yearly revision of population benchmarks mentioned above.

LFS estimates will be revised back to April 2001 to reflect this change. Revised estimates will be available with the release of the February 2004 issue of this publication on 11 March 2004. Analysis has shown that the unemployment rate will increase as a result of this definitional change by an average of 0.1 - 0.2 percentage points. A small break will remain in the unemployed persons and unemployment rate series at April 2001.

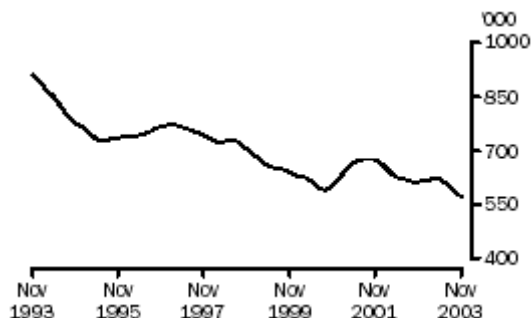
## EMPLOYED PERSONS

The trend estimate of employed persons generally rose from a low of 7,634,000 in January 1993 to 9,129,300 in September 2000. The trend estimate then fell slightly to 9,112,900 in December 2000, before rising to 9,540,300 in March 2003. The trend estimate then fell for three months, before rising to stand at 9,610,500 in November 2003.



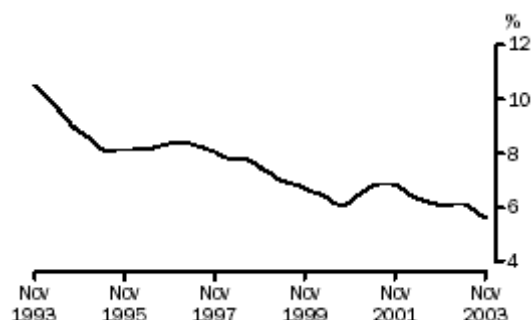
## UNEMPLOYED PERSONS

The trend estimate of unemployed persons fell rapidly from 920,600 in September 1993 to 728,100 in July 1995. The trend estimate then rose to 771,800 in February 1997, before falling to 590,900 in September 2000. After rising to 675,900 in October 2001, the trend estimate has generally fallen to stand at 572,400 in November 2003.



## UNEMPLOYMENT RATE

The trend unemployment rate fell rapidly from 10.7% in August 1993 to 8.1% in July 1995. The trend estimate then rose slowly, reaching 8.4% in February 1997, before falling to 6.1% in September 2000. After rising to 6.9% in September 2001, the trend estimate has generally fallen to stand at 5.6% in November 2003.



## About this Release

### ABOUT THIS RELEASE

Summary results of the monthly Labour Force Survey containing estimates of employed and unemployed persons classified by sex, full-time/part-time status, states and territories and some age groups; and persons not in the labour force.

6202.0 was published as Labour Force, Australia, Preliminary until March 2003. As the publication had provided final summary data for a number of years to that point, the misleading qualification preliminary was removed from the April 2003 issue onwards.

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# Explanatory Notes

## Explanatory Notes

### INTRODUCTION

**1** This publication contains estimates of the civilian labour force derived from the Labour Force Survey component of the Monthly Population Survey. More detailed estimates are released one week after this publication in various electronic formats - see **Labour Force, Australia, Detailed - Electronic Delivery** (cat. no. 6291.0.55.001).

### CONCEPTS, SOURCES AND METHODS

**2** The conceptual framework used in Australia's Labour Force Survey aligns closely with the standards and guidelines set out in Resolutions of the International Conference of Labour Statisticians. Descriptions of the underlying concepts and structure of Australia's labour force statistics, and the sources and methods used in compiling the estimates, are presented in **Labour Statistics: Concepts, Sources and Methods** (cat. no. 6102.0) which is also available on the ABS web site (About Statistics - Concepts and Classifications).

### MONTHLY POPULATION SURVEY

**3** The population survey is based on a multi-stage area sample of private dwellings (currently about 30,000 houses, flats, etc.) and a list sample of non-private dwellings (hotels, motels, etc.), and covers about 0.45% of the population of Australia. The information is obtained from the occupants of selected dwellings by specially trained interviewers. The information obtained relates to the week before the interview (i.e. the reference week).

**4** Households selected for the Labour Force Survey are interviewed each month for 8 months, with one eighth of the sample being replaced each month. The first interview is conducted face-to-face. Subsequent interviews are conducted by telephone (if acceptable to the respondent).

**5** The interviews are generally conducted during the two weeks beginning on the Monday between the 6th and 12th of each month. Each year, to deal with operational difficulties involved with collecting and processing the Labour Force Survey around the Christmas and New Year holiday period, interviews for December start four weeks after November interviews start, and January interviews start five weeks after December interviews start. As a result, January interviewing may commence as early as the 8th or as late as the 14th, depending on the year. Occasionally, circumstances that present significant operational difficulties for survey collection can result in a change to the normal pattern for the start of interviewing.

**6** Estimates from the Labour Force Survey are published first in this publication 31 days after the commencement of interviews for that month, with the exception of estimates for each December which are published 38 days after the commencement of interviews.

### SCOPE OF SURVEY

**7** The Labour Force Survey includes all persons aged 15 and over except members of the permanent defence forces, certain diplomatic personnel of overseas governments

customarily excluded from census and estimated population counts, overseas residents in Australia, and members of non-Australian defence forces (and their dependants) stationed in Australia.

## COVERAGE

**8** In the Labour Force Survey, coverage rules are applied which aim to ensure that each person is associated with only one dwelling, and hence has only one chance of selection. The coverage rules are necessarily a balance between theoretical and operational considerations. Nevertheless, the chance of a person being enumerated at two separate dwellings in the survey is considered to be negligible.

## POPULATION BENCHMARKS

**9** Labour Force Survey estimates are calculated in such a way as to add up to independent estimates of the civilian population aged 15 and over (population benchmarks). From February 1999, labour force estimates have been compiled using benchmarks based on the results of the 1996 Census of Population and Housing. Small revisions were made to many of the historical estimates from January 1995 to January 1999. The ABS expects to introduce new benchmarks, based on the 2001 Census, in February 2004.

## COMPARABILITY OF SERIES

**10** From April 1986, the definition of employed persons was changed to include persons who worked without pay between 1 and 14 hours per week in a family business or on a farm (i.e. contributing family workers). For further information, see paragraphs 36 and 37 of the Explanatory Notes to the February 1987 issue of **Labour Force, Australia** (cat. no. 6203.0).

**11** The ABS introduced telephone interviewing into the Labour Force Survey in August 1996. Implementation was phased in for each new sample group from August 1996 to February 1997. During the period of implementation, the new method produced different estimates than would have been obtained under the old methodology. The effect dissipated over the final months of implementation and was no longer discernible from February 1997. The estimates for February 1997 and onwards are directly comparable to estimates for periods prior to August 1996. For further details, see the feature article in the June 1997 issue of **Labour Force, Australia** (cat. no. 6203.0).

**12** From April 2001 the Labour Force Survey has been conducted using a redesigned questionnaire containing additional data items and some minor definitional changes. Core labour force series were revised for the period April 1986 to March 2001 to ensure continuity. For further details, see **Information Paper: Implementing the Redesigned Labour Force Survey Questionnaire** (cat. no. 6295.0) and **Information Paper: Questionnaires Used in the Labour Force Survey** (cat. no. 6232.0).

## SURVEY SAMPLE REDESIGN

**13** The Labour Force Survey sample was last reselected using information collected in the 2001 Census of Population and Housing.

**14** The bulk of the new sample was phased in over the period November 2002 to June 2003, with one eighth of this portion of the sample being introduced every month. The remainder of the sample (about 18% of the total), which covers less settled areas of Australia and non-private dwellings was rotated in full for New South Wales, Victoria, Tasmania, Northern Territory and Australian Capital Territory in November 2002, and for Queensland, South Australia and Western Australia in December 2002. Such a pattern of

implementation means that any changes to labour force estimates due to differences between the two samples, or any other influences, were spread over the eight months.

**15** For further details, see **Information Paper: Labour Force Survey Sample Design** (cat. no. 6269.0) and **Technical Report: New Labour Force Survey sample selections: analysis of the effect on estimates** in the October 2003 issue of **Australia Labour Market Statistics** (cat. no. 6105.0).

## RELIABILITY OF ESTIMATES

**16** Two types of error are possible in an estimate based on a sample survey: sampling error and non-sampling error.

**Sampling error** occurs because a sample, rather than the entire population, is surveyed. One measure of the likely difference resulting from not including all dwellings in the survey is given by the standard error. There are about two chances in three that a sample estimate will differ by less than one standard error from the figure that would have been obtained if all dwellings had been included in the survey, and about nineteen chances in twenty that the difference will be less than two standard errors. Standard errors of estimates for the latest month and of estimates of movements since the previous month are shown on pages 27 and 28. Standard errors of other estimates and other movements may be determined by using information in the Technical Notes in **Labour Force, Australia** (cat. no. 6203.0).

**Non sampling error** arises from inaccuracies in collecting, recording and processing the data. Every effort is made to minimise reporting error by the careful design of questionnaires, intensive training and supervision of interviewers, and efficient data processing procedures.

## SEASONAL ADJUSTMENT AND TREND ESTIMATION

**17** Seasonally adjusted series are published in Tables 2, 4 to 9, and 14. Seasonal factors have previously been reviewed annually to take account of each additional year's original data. The results of the latest review were used to compile the seasonally adjusted and trend estimates given in this publication. Information about the last annual review of seasonal factors was published in a feature article in the February 2003 issue of **Labour Force, Australia** (cat no. 6203.0). From the December 2003 issue of this publication, the ABS will replace this process with concurrent seasonal adjustment, as explained under 'Forthcoming Changes' on page 3 of this issue.

**18** Seasonal adjustment is a means of removing the estimated effects of normal seasonal variation from the series so that the effects of other influences on the series can be more clearly recognised. Seasonal adjustment does not aim to remove the irregular or non-seasonal influences which may be present in any particular month. This means that month-to-month movements of the seasonally adjusted estimates may not be reliable indicators of trend behaviour. For example, irregular factors unrelated to the trend account for more than half the seasonally adjusted movement with the following frequency:

- Employment: 6 in 10 monthly movements
- Unemployment: 8 in 10 monthly movements
- Unemployment rate: 7 in 10 monthly movements
- Participation rate: 9 in 10 monthly movements.

**19** The smoothing of seasonally adjusted series reduces the impact of the irregular component of the seasonally adjusted series, and creates trend estimates. These trend



estimates are derived by applying a 13-term Henderson-weighted moving average to all months except the last six. The last six monthly trend estimates are obtained by applying surrogates of the Henderson average to the seasonally adjusted series. Trend series are used to analyse the underlying behaviour of the series over time. These are published in tables 1, 4 to 11, and 13.

**20** While this smoothing technique enables estimates to be produced for the latest month, it does result in revisions to the most recent months as additional observations become available. Generally, subsequent revisions become smaller, and after three months have a negligible impact on the series. There will also be revisions as a result of the annual review of seasonal factors.

**21** Trend estimates are published for the Northern Territory in table 10 and for the Australian Capital Territory in table 11. Unadjusted series for the two territories have shown, historically, a high degree of variability, which can lead to considerable revisions to the seasonally adjusted estimates after each annual seasonal factor re-analysis. Seasonally adjusted estimates are not currently published for the two Territories. The most recent six months trend estimates are subject to revision. For the three most recent months, the revision may be relatively large. Inferences about trends drawn from smoothed seasonally adjusted (trend) estimates for months earlier than the latest three months are unlikely to be affected by month to month revisions. They may be affected by revision resulting from the annual re-analysis of seasonal factors.

**22** For further information, see **A Guide to Interpreting Time Series - Monitoring 'Trends': an Overview** (cat. no. 1348.0) or contact the Assistant Director, Time Series Analysis on (02) 6252 6345.

## RELATED PUBLICATIONS

**23** Users may also wish to refer to **Australian Labour Market Statistics** (cat. no. 6105.0). This publication contains additional tables and a detailed list of related publications. For further information about this publication, please contact the Assistant Director, Labour Market Statistics on (02) 6252 7636.

**24** ABS Information about the labour market can be found on the **Labour theme page** on the ABS web site (Themes - People, Labour), or from ABS Bookshops.

**25** Current publications and other products released by the ABS are listed in the **Catalogue of Publications and Products** (cat. no. 1101.0). The Catalogue is available from any ABS office or on this web site (Products and Services). The ABS also issues a daily **Release Advice** on the web site (Information on Releases) which details products to be released in the week ahead.

## DATA AVAILABLE ON REQUEST

**26** As well as the statistics included in this and related publications, the ABS may have other relevant data available. Inquiries should be made to Craig Blair on (02) 6252 6525 or to any ABS office.

## EFFECTS OF ROUNDING

**27** Estimates have been rounded and discrepancies may occur between sums of the component items and totals.

**28** Estimates of movement shown in this publication are obtained by taking the difference of

unrounded estimates. The movement estimate is then rounded to one decimal place. Therefore where a discrepancy occurs between the reported movement and the difference of the rounded estimates, the reported movement will be more accurate.

## **SYMBOLS AND OTHER USAGES**

### **29 SYMBOLS AND OTHER USAGES**

pts percentage points

## **Glossary**

### **Actively looking for work**

Includes writing, telephoning or applying in person to an employer for work; answering an advertisement for a job; checking factory noticeboards or the touchscreens at the Centrelink offices; being registered with Centrelink as a jobseeker; checking or registering with any other employment agency; advertising or tendering for work; and contacting friends or relatives.

### **Attending full-time education**

Persons aged 15 to 24 enrolled at secondary or high school or enrolled as a full time student at a Technical and Further Education (TAFE) college, university, or other educational institution in the reference week.

### **Attending school**

Persons aged 15 to 19 years enrolled at secondary or high school in the reference week.

### **Attending tertiary educational institution full time**

Persons aged 15 to 24 years enrolled full time at a TAFE college, university, or other educational institution in the reference week, except those persons aged 15 to 19 years who were still attending school.

### **Civilian population aged 15 years and over**

All usual residents of Australia aged 15 years and over except members of the permanent defence forces, certain diplomatic personnel of overseas governments customarily excluded from census and estimated population counts, overseas residents in Australia, and members of non-Australian defence forces (and their dependants) stationed in Australia.

### **Employed**

All persons aged 15 years and over who, during the reference week:

- worked for one hour or more for pay, profit, commission or payment in kind in a job or business, or on a farm (comprising employees, employers and own account workers); or
- worked for one hour or more without pay in a family business or on a farm (i.e. contributing family workers); or

- were employees who had a job but were not at work and were:
  - away from work for less than four weeks up to the end of the reference week; or
  - away from work for more than four weeks up to the end of the reference week and received pay for some or all of the four week period to the end of the reference week; or
  - away from work as a standard work or shift arrangement; or
  - on strike or locked out; or
  - on workers' compensation and expected to return to their job; or
- were employers or own account workers, who had a job, business or farm, but were not at work.

## **Employment to population ratio**

For any group, the number of employed persons expressed as a percentage of the civilian population in the same group.

## **Full-time workers**

Employed persons who usually worked 35 hours or more a week (in all jobs) and those who, although usually working less than 35 hours a week, worked 35 hours or more during the reference week.

## **Labour force**

For any group, persons who were employed or unemployed, as defined.

## **Labour force status**

A classification of the civilian population aged 15 years and over into employed, unemployed or not in the labour force, as defined. The definitions conform closely to the international standard definitions adopted by the International Conferences of Labour Statisticians.

## **Not in the labour force**

Persons who were not in the categories employed or unemployed as defined.

## **Participation rate**

For any group, the labour force expressed as a percentage of the civilian population aged 15 years and over in the same group.

## **Part-time workers**

Employed persons who usually worked less than 35 hours a week (in all jobs) and either did so during the reference week, or were not at work in the reference week.

## **Seasonally adjusted series**

A time series of estimates with the estimated effects of normal seasonal variation removed. See Explanatory Notes 17 and 18 for more detail.

## **Trend series**

A smoothed seasonally adjusted series of estimates. See Explanatory Notes 19 to 21 for

more detail.

## **Unemployed**

Persons aged 15 years and over who were not employed during the reference week, and:

- had actively looked for full-time or part-time work at any time in the four weeks up to the end of the reference week and:
  - were available for work in the reference week; or
  - were waiting to start a new job within four weeks from the end of the reference week and could have started in the reference week if the job had been available then.

## **Unemployed looking for full-time work**

Unemployed persons who:

- actively looked for full-time work and were available for work in the reference week; or
- actively looked for work and were not available for work in the reference week because they were waiting to start a new full-time job.

## **Unemployed looking for part-time work**

Unemployed persons who:

- actively looked for part-time work only and were available for work in the reference week; or
- actively looked for work and were not available for work in the reference week because they were waiting to start a new part-time job.

## **Unemployment rate**

For any group, the number of unemployed persons expressed as a percentage of the labour force in the same group.

## **Unemployment to population ratio**

For any group, the number of unemployed persons expressed as a percentage of the civilian population in the same group.

## **EFFECT OF NEW SEASONALLY ADJUSTED ESTIMATES ON TREND ESTIMATES**

### **TREND REVISIONS**

Each time new seasonally adjusted estimates become available, trend estimates are revised (see paragraphs 19 and 20 of Explanatory Notes).

The examples in the tables below show two illustrative scenarios and the consequent revisions to previous trend estimates of employment and the unemployment rate.

(1) The December seasonally adjusted estimate is **higher** than the November estimate by:

- 0.30% for employment
- 1.90% for the unemployment rate

(2) The December seasonally adjusted estimate is **lower** than the November estimate by:

- 0.30% for employment
- 1.90% for the unemployment rate

The percentage changes of 0.30% and 1.90% were chosen because they represent the average absolute monthly percentage changes in employment and the unemployment rate respectively.

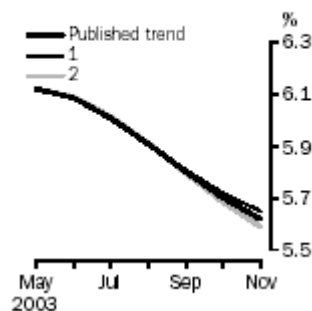
#### EMPLOYMENT



#### WHAT IF NEXT MONTH'S SEASONALLY ADJUSTED ESTIMATE IS:

2003	TREND AS PUBLISHED	(1) 9666.4 i.e. rises by 0.30%	(2) 9608.6 i.e. falls by 0.30%
August	9 531.1	9 529.8	9 530.7
September	9 557.1	9 560.1	9 557.5
October	9 584.9	9 593.5	9 584.9
November	9 610.5	9 625.4	9 609.2

#### UNEMPLOYMENT RATE



#### WHAT IF NEXT MONTH'S SEASONALLY ADJUSTED ESTIMATE IS:

2003	TREND AS PUBLISHED	(1) 5.7 i.e. rises by 1.90%	(2) 5.5 i.e. falls by 1.90%
August	5.9	5.9	5.9
September	5.8	5.8	5.8
October	5.7	5.7	5.7
November	5.6	5.7	5.6

## Quality Measures (Technical Note)

### Technical Note - Quality Measures

#### STANDARD ERRORS

The estimates in this publication are based on information gained from the occupants of a sample survey of dwellings. Because the entire population is not surveyed, the published estimates are subject to sampling error. The most common way of quantifying such sampling error is to calculate the standard error for the published estimate or statistic.

## LEVEL ESTIMATES

To illustrate, let us say the published level estimate for employed persons aged 15 to 19 is 700,000. The calculated standard error in this case is 9,800. The standard error is then used to interpret the level estimate of 700,000. For instance, the standard error of 9,800 indicates that:

- There are approximately two chances in three that the real value falls within the range 690,200 to 709,800 (700,000 + or - 9,800)
- There are approximately nineteen chances in twenty that the real value falls within the range 680,400 to 719,600 (700,000 + or - 19,600).

The real value in this case is the result we would obtain if we could enumerate the total population.

The following table shows the standard errors for this month's level estimates.

										AUSTRALIA		
										NSW	Vic.	Qld
										SA	WA	Tas.
										NT	ACT	Males
										Females	Persons	
<b>Aged 15 and over</b>												
Employed												
Full time	'000	18.8	14.2	11.1	5.1	5.5	1.9	1.2	1.8	21.8	16.0	29.0
Part time	'000	10.7	8.9	7.9	3.7	4.1	1.4	0.9	1.2	10.3	14.8	17.0
Total	'000	22.8	17.1	12.7	5.9	6.1	2.1	1.4	2.1	24.1	20.9	38.9
Unemployed												
Looking for f/t work	'000	5.0	3.8	3.7	1.8	2.1	0.8	0.4	0.4	6.5	5.7	8.0
Looking for p/t work	'000	3.6	2.7	2.3	1.1	1.4	0.4	0.2	0.3	3.6	4.5	5.3
Total	'000	5.5	4.2	4.1	2.0	2.3	0.8	0.4	0.5	7.0	6.7	8.9
Labour force	'000	23.6	17.6	12.9	6.0	6.2	2.2	1.4	2.1	25.0	21.6	41.0
Not in labour force	'000	17.2	13.1	10.3	5.0	5.1	1.9	1.0	1.4	15.8	19.2	25.6
Unemployment rate												
Looking for f/t work	%	0.2	0.2	0.3	0.3	0.3	0.5	0.5	0.3	0.1	0.2	0.1
Looking for p/t work	%	0.4	0.4	0.4	0.5	0.5	0.6	0.8	0.7	0.4	0.2	0.2
Total	%	0.2	0.2	0.2	0.3	0.2	0.4	0.4	0.3	0.1	0.1	0.1
Participation rate	%	0.4	0.4	0.4	0.5	0.4	0.6	1.0	0.8	0.3	0.3	0.3
<b>Aged 15-19</b>												
Employed												
Full time	'000	4.1	2.8	3.2	1.4	1.8	0.6	0.4	0.4	5.4	4.4	6.4
Part time	'000	5.1	4.2	4.0	1.7	2.1	0.7	0.4	0.6	6.1	6.8	8.4
Total	'000	5.9	4.6	4.9	2.1	2.6	0.8	0.5	0.7	7.5	7.6	9.8
Unemployed												
Looking for f/t work	'000	2.5	1.7	1.5	0.8	1.1	0.3	0.2	0.3	2.9	2.7	3.8
Looking for p/t work	'000	2.5	1.9	1.6	0.8	1.0	0.3	0.1	0.3	2.8	2.9	3.8
Total	'000	3.3	2.3	2.1	1.0	1.4	0.4	0.2	0.3	3.8	3.8	4.9
Labour force	'000	6.2	4.9	5.1	2.2	2.7	0.9	0.5	0.7	8.0	8.0	10.4
Not in labour force	'000	5.8	4.6	3.8	1.9	2.3	0.8	0.6	0.6	7.2	6.9	9.2

Unemployment rate												
Looking for f/t work	%	2.9	3.4	2.2	3.5	2.9	3.6	5	7.3	1.7	2.5	1.3
Looking for p/t work	%	1.6	1.4	1.4	2.0	1.9	2.6	3.7	2.3	1.2	1.0	0.7
Total	%	1.3	1.3	1.2	1.7	1.5	2	2.9	2.2	1.0	0.9	0.6
Participation rate	%	1.4	1.4	1.9	2.1	1.9	2.6	3.5	3.1	1.1	1.2	0.8
Unemployment to population ratio - looking for f/t work	%	0.6	0.5	0.5	0.8	0.7	1.0	1.1	1.1	0.4	0.4	0.3

## MOVEMENT ESTIMATES

The following example illustrates how to use the standard error to interpret a movement estimate. Let us say that one month the published level estimate for females employed part time in Australia is 1,890,000; the next month the published level estimate is 1,900,000. The calculated standard error for the movement estimate is 10,300. The standard error is then used to interpret the published movement estimate of 10,000. For instance, the standard error of 10,300 indicates that:

- There are approximately two chances in three that the real movement between the two months falls within the range -300 to 20,300 (10,000 + or - 10,300)
- There are approximately nineteen chances in twenty that the real movement falls within the range -10,600 to 30,600 (10,000 + or - 20,600).

The following table shows the standard errors for this month's movement estimates.

										AUSTRALIA		
										NSW	Vic.	Qld
										SA	WA	Tas.
										NT	ACT	Males
												Females
												Persons
<b>Aged 15 and over</b>												
<b>Employed</b>												
Full time	'000	10.0	7.6	6.9	3.2	3.9	1.3	1.1	1.0	14.2	11.2	16.4
Part time	'000	7.2	5.6	5.1	2.4	2.9	1.0	0.7	0.8	7.6	10.5	11.8
Total	'000	11.1	8.6	7.8	3.6	4.4	1.4	1.2	1.1	15.0	13.9	18.5
<b>Unemployed</b>												
Looking for f/t work	'000	3.8	2.8	2.7	1.3	1.6	0.5	0.4	0.3	5.1	4.4	6.0
Looking for p/t work	'000	2.6	2.1	1.8	0.8	1.1	0.3	0.2	0.3	2.8	3.5	4.1
Total	'000	4.2	3.2	2.9	1.4	1.7	0.6	0.4	0.4	5.4	5.1	6.7
Labour force	'000	11.3	8.7	7.9	3.7	4.5	1.5	1.2	1.2	15.3	14.1	18.9
Not in labour force	'000	9.5	7.3	6.4	3.1	3.6	1.3	0.9	0.9	11.1	13.0	15.5
<b>Unemployment rate</b>												
Looking for f/t work	%	0.2	0.2	0.2	0.2	0.2	0.3	0.5	0.3	0.1	0.2	0.1
Looking for p/t work	%	0.3	0.3	0.3	0.4	0.4	0.5	0.8	0.5	0.3	0.2	0.1

Total	%	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.2	0.1	0.1	0.1
Participation rate	%	0.2	0.2	0.3	0.3	0.3	0.4	0.9	0.5	0.2	0.2	0.1
<b>Aged 15-19</b>												
Employed												
Full time	'000	3.1	2.1	2.3	1.0	1.4	0.5	0.3	0.3	4.2	3.4	4.9
Part time	'000	3.9	3.1	2.8	1.2	1.6	0.5	0.3	0.5	4.7	5.2	6.3
Total	'000	4.4	3.4	3.3	1.4	1.9	0.6	0.4	0.5	5.7	5.7	7.3
Unemployed												
Looking for f/t work	'000	2.0	1.3	1.4	0.7	0.9	0.3	0.2	0.2	2.5	2.2	3.0
Looking for p/t work	'000	2.0	1.6	1.4	0.6	0.8	0.3	0.1	0.2	2.3	2.5	3.1
Total	'000	2.5	1.8	1.7	0.9	1.1	0.3	0.2	0.3	3.1	2.9	3.8
Labour force	'000	4.7	3.6	3.5	1.5	2.0	0.6	0.5	0.5	6.0	6.0	7.7
Not in labour force	'000	4.4	3.4	2.7	1.3	1.7	0.6	0.5	0.4	5.4	5.2	6.8
Unemployment rate												
Looking for f/t work	%	2.2	2.8	2.0	2.9	2.4	3.0	4.7	5.8	1.4	2.1	1.1
Looking for p/t work	%	1.3	1.1	1.2	1.7	1.6	2.0	3.2	1.9	1.0	0.8	0.6
Total	%	1.0	1.0	0.9	1.4	1.2	1.6	2.6	1.7	0.8	0.7	0.5
Participation rate	%	1.0	1.1	1.3	1.5	1.4	1.8	3.1	2.2	0.9	0.9	0.6
Unemployment to population ratio - looking for f/t work												
	%	0.4	0.4	0.5	0.7	0.6	0.8	1.2	0.9	0.4	0.3	0.2

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